

REMARKS

Claims 1-34 were pending, claims 27-30 are cancelled, and claims 8-13, 26, and 31-34 are withdrawn from consideration.

Claims 1-7, and 14-22 are presently under consideration. Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience, Applicant's remarks are presented in the order in which they were raised in the Office Action.

Amendments to the claims

By this amendment, independent claims 1, 15 and 18 have been amended to more clearly define the claimed invention. Amended claims 1 and 15 specify that the altered DNA methylase activity is caused by altering the expression of the DNA adenine methylase (*Dam*) gene itself. Amended claim 18 specifies attenuated bacteria containing a mutation in the regulatory or coding regions of the DNA adenine methylase (*Dam*) gene. Support for the amended claims can be found in the specification at pages 40 (para [00154]) and 42 (para [00160]) *inter alia*. No new matter has been added. Amendment, withdrawal and cancellation of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented.

Priority

The specification has been amended to provide updated status of all parent applications.

Restrictions

Applicants withdraw from consideration claims 8-13, 23-26, and 31-34. Applicants reserve the right to rejoin withdrawn method claims directed to a product, if the product claim is found allowable.

Claim Objections

Claim 1 is amended according to the Examiner's suggestion for clarification, to specify "wherein the altered DNA adenine methylase activity renders the bacteria non-pathogenic" replacing the term "which."

Rejections Under 35 U.S.C. §§ 102 and 103

(i) Claims 1-7, 14-19 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Miller, III *et al.* (U.S. Patent No. 5,731,196).

The '196 patent is cited for disclosing *S. typhi* including virulence attenuating mutation in a gene regulated by a PhoP regulatory system. The Examiner cites to the Specification of the present application for stating that "Dam and PhoP constitute an overlapping global regulatory system." Consequently the '196 patent is stated to inherently anticipate the claimed invention.

In response, Applicants amend independent claims 1 and 15 to specify that the "altered DNA methylase activity is caused by altering the expression of the DNA adenine methylase (*Dam*) gene" and amend independent claim 18 to specify "attenuated bacteria containing a mutation in the regulatory or coding regions of the DNA adenine methylase (*Dam*) gene."

Applicants submit that Dam does not significantly affect expression of all PhoP activated genes (Specification, page 72, para [00253]) and while PhoP may affect DNA methylation activity, "this regulation does not occur at the transcriptional level since Dam does not alter PhoP expression, nor does PhoP alter Dam expression." (Specification, page 72, para [00254]). Therefore, PhoP mutations do not inherently disclose the claimed invention, as amended, and withdrawal of this ground for rejection over the '196 patent is respectfully requested.

(ii) Claims 1-7, 14-18 and 22 are rejected under 35 U.S.C. § 102(e) as being anticipated by Miller, III *et al.* (U.S. Patent No. 5,843,426).

The '426 patent is cited for teaching a Salmonella vaccine featuring *S. typhi* which is attenuated by a mutation in a PhoP region.

As discussed above, independent claims 1, 15 and 18, as amended, specify bacteria where the alteration of Dam activity is caused by altering expression of the Dam gene or mutating the Dam gene. As mentioned above, the Specification (page 72, para [00254], sentence before last) states that PhoP does not affect Dam expression and therefore, bacteria with mutated PhoP do not anticipate the present invention. Withdrawal of this ground for rejection is respectfully requested.

(iii) Claims 1-7, 14-22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Miller, S.I. and Mekalanos, J.J. 1990 (J. Bacteriol. 172(5): 2485-2490).

Miller and Mekalanos disclose *Salmonella* bacteria with mutations in the *phoP* and *phoQ* genes. Miller and Mekalanos do not disclose bacteria with altered Dam expression or Dam mutations. As mentioned above, the Specification (page 72, para [00254], sentence before last) states that PhoP does not affect Dam expression.

Applicants have amended independent claims 1 and 15 to specify that the "altered DNA methylase activity is caused by altering the expression of the DNA adenine methylase (*Dam*) gene" and amended independent claim 18 to specify "attenuated bacteria containing a mutation in the regulatory or coding regions of the DNA adenine methylase (*Dam*) gene."

Therefore, Applicants submit that Miller and Mekalanos do not anticipate independent claims 1, 15 and 18, as amended. Claims 2-7, 14, 16-17 and 19-22 depend from independent claims 1, 15 and 18, and therefore Applicants respectfully request withdrawal of this ground for rejection.

Double Patenting

Claims 1-7 and 14-22 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-46 of copending Application No. 09/928,227.

Claims 1-7 and 14-22 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-29 of copending Application No. 09/927,788.

Applicants submit that should the present claims in the co-pending applications be found allowable, Applicants will file a terminal disclaimer.

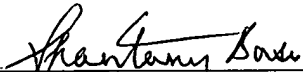
CONCLUSION

In light of the amendments and arguments set forth above, Applicants earnestly believe that they are entitled to a letters patent and respectfully request the Examiner to expedite prosecution of this patent application to issuance. Should the Examiner have any questions, the Examiner is encouraged to telephone the undersigned.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 220002060723. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

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